

# Notice of Allowability

|                 |              |  |
|-----------------|--------------|--|
| Application No. | Applicant(s) |  |
| 10/785,299      | GAO ET AL.   |  |
| Examiner        | Art Unit     |  |
| Albert K. Wong  | 2635         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed 2/24/2004.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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1. This Office action is in response to the application filed February 24, 2004. Claims 1-30 are pending.

#### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Hawes on March 2, 2006.

The application has been amended as follows:

1. (Currently Amended) A borehole telemetry system comprising:
  - a coiled tubing string for use in the borehole;
  - a receiver coupled to the coiled tubing string; and
  - a transmitter coupled to the coiled tubing string; wherein the transmitter generates signals guided for at least a portion of their path by the entire internal cross-section of a gas-filled section of the coiled tubing string to the receiver.
12. (Currently Amended) A borehole telemetry system comprising:
  - a coiled tubing string substantially rotatably fixed in the borehole;
  - a receiver coupled to the coiled tubing string; and
  - a transmitter coupled to the coiled tubing string;wherein the transmitter generates signals guided for at least a portion of their path by a gas-filled section of the coiled tubing string to the receiver.

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23. (Currently Amended) A method for communicating in a borehole, comprising the steps of:

generating signals at a transmitter coupled to a coiled tubing string in the borehole;

transmitting the signals in the entire internal cross-section of a gas-filled section of the coiled tubing string along at least a portion of their path; and

receiving the signals at a receiver coupled to the coiled tubing string.

3. Claims 1-30 are allowed.

4. The following is an examiner's statement of reasons for allowance: The claims recite a system and method for transmitting signals within the entire cross-section of a coiled tubing that is gas-filled. Such a combination is not taught or suggested by the prior art of record. Gearhart (5,831,549) teaches the transmission of signals within the cross section of a gas-filled tubing within the borehole. However, the signal is not transmitted within the coiled tubing. The signal is transmitted within a separate tube located within the coiled tubing. Fitzpatrick (3,905,010) teaches the transmission of signals within a well tubing. However, the tube is not filled with gas, but a liquid which results in signal attenuation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert K. Wong whose telephone number is 571-272-3057. The examiner can normally be reached on M-Th.

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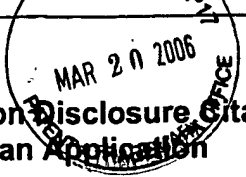
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 571-272-3068. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert K. Wong  
March 3, 2006

**ALBERT K. WONG**  
**PRIMARY EXAMINER**



|  |  |   |
|--|--|---|
| PTO-1449<br><br><b>Information Disclosure Citation<br/>in an Application</b> | Application No.<br><br>Docket Number<br>HES 2002-IP-009292U1 | Applicant(s)<br>Li Gao and Dingding Chen<br><br>Group Art Unit<br><br>Filing Date |
|--|--|---|

**U.S. PATENT DOCUMENTS**

|   |   | DOCUMENT NO. | DATE       | NAME          | CLASS | SUBCLASS | FILING DATE |
|---|---|--------------|------------|---------------|-------|----------|-------------|
| 2 | A | 2,848,696    | 08/19/1958 | Miller        | 333   | 95       | 03/15/1954  |
| 1 | B | 4,066,987    | 01/03/1978 | Moore, et al. | 333   | 95       | 03/25/1975  |
| 1 | C | 4,071,834    | 01/31/1978 | Comte         | 333   | 95       | 06/07/1976  |
| 1 | D | 4,246,584    | 01/20/1981 | Noerpel       | 343   | 786      | 08/22/1979  |
| 1 | E | 5,148,134    | 09/15/1992 | Krill, et al. | 333   | 242      | 03/29/1991  |
| 1 | F | 5,202,650    | 04/13/1993 | Krill, et al. | 333   | 034      | 06/26/1991  |
| 1 | G | 5,831,549    | 11/03/1998 | Gearhart      | 340   | 853.1    | 05/27/1997  |
| 1 | H |              |            |               |       |          |             |

**FOREIGN PATENT DOCUMENTS**

|  |   | DOCUMENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION |    |
|--|---|--------------|------|---------|-------|----------|-------------|----|
|  |   |              |      |         |       |          | YES         | NO |
|  | I |              |      |         |       |          |             |    |
|  | J |              |      |         |       |          |             |    |
|  | K |              |      |         |       |          |             |    |
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|  | S |              |      |         |       |          |             |    |
|  | T |              |      |         |       |          |             |    |

**NON-PATENT DOCUMENTS**

|   |   | DOCUMENT (Including Author, Title, Source, and Pertinent Pages)                        | DATE |
|---|---|--|------|
| 2 | U | Paper entitled "Waveguide as a Communication Medium" by S.E. Miller, dated March 1954. |      |
| 2 | V | "Microwave Engineering" by David M. Pozar, pages 132-141, dated 1998.                  |      |
|   | W |  |      |

EXAMINER

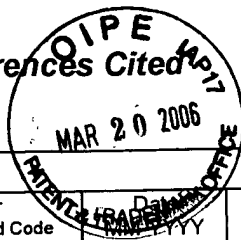
*alt*

DATE CONSIDERED

3/3/06

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

# Notice of References Cited



|                                       |  |  |             |
|---------------------------------------|--|--|-------------|
| Application/Control No.<br>10/785,299 |  | Applicant(s)/Patent Under<br>Reexamination<br>GAO ET AL. |             |
| Examiner<br>Albert K. Wong            |  | Art Unit<br>2635   | Page 1 of 1 |

## U.S. PATENT DOCUMENTS

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                      | Classification |
|---|---|--|-----------------|---------------------------|----------------|
| * | A | US-4,928,759                                     | 05-1990         | Siegfried et al.          | 166/65.1       |
| * | B | US-6,474,349                                     | 11-2002         | Laker, Keith Trevor       | 134/22.12      |
| * | C | US-6,719,068                                     | 04-2004         | Jonsson, Lennart          | 175/19         |
| * | D | US-3,905,010                                     | 09-1975         | Fitzpatrick, John Douglas | 340/854.4      |
|   | E | US-  |                 |                           |                |
|   | F | US-  |                 |                           |                |
|   | G | US-  |                 |                           |                |
|   | H | US-  |                 |                           |                |
|   | I | US-  |                 |                           |                |
|   | J | US-  |                 |                           |                |
|   | K | US-  |                 |                           |                |
|   | L | US-  |                 |                           |                |
|   | M | US-  |                 |                           |                |

## FOREIGN PATENT DOCUMENTS

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
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|   | T |  |                 |         |      |                |

## NON-PATENT DOCUMENTS

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
|   | U |   |
|   | V |   |
|   | W |   |
|   | X |   |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.